

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Application Review**

**Issue Date:**

**Region:** Raleigh Regional Office  
**County:** Wake  
**NC Facility ID:** 9200830  
**Inspector's Name:** Stanley Williams  
**Date of Last Inspection:** 10/25/2018  
**Compliance Code:** 3 / Compliance - inspection

<b>Facility Data</b>  <b>Applicant (Facility's Name):</b> INGENCO Wholesale Power, LLC - Apex  <b>Facility Address:</b> INGENCO Wholesale Power, LLC - Apex 6512 Old Smithfield Road Apex, NC 27502  <b>SIC:</b> 4931 / Elec & Other Services Combined <b>NAICS:</b> 221112 / Fossil Fuel Electric Power Generation  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V				<b>Permit Applicability (this application only)</b>  <b>SIP:</b> 15A NCAC 02D .0516, .0521, .1111, 15A NCAC 02Q .0317 <b>NSPS:</b> <b>NESHAP:</b> GACT ZZZZ <b>PSD:</b> <b>PSD Avoidance:</b> 15A NCAC 02D .0530 <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b> SB3 BACT (State-enforceable only)			
<b>Contact Data</b>				<b>Application Data</b>			
<b>Facility Contact</b>  Al Hight Plant Supervisor (919) 387-2258 6512 Old Smithfield Road Apex, NC 27502		<b>Authorized Contact</b>  Jeremiah Lauer Vice President Operations Manager (203) 564-8100 2250 Dabney Road Richmond, VA 23230		<b>Technical Contact</b>  Matthew Weeks Associate, Environmental Professional (804) 521-3572 2250 Dabney Road Richmond, VA 23230		<b>Application Number:</b> 9200830.19A <b>Date Received:</b> 08/12/2019 <b>Application Type:</b> Renewal <b>Application Schedule:</b> TV-Renewal <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 10198/T05 <b>Existing Permit Issue Date:</b> 07/11/2018 <b>Existing Permit Expiration Date:</b> 04/30/2020	
<b>Total Actual emissions in TONS/YEAR:</b>							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2018	2.35	91.00	61.37	229.27	4.89	1.62	1.62 [Formaldehyde]
2017	2.39	90.78	61.18	228.72	4.86	1.62	1.62 [Formaldehyde]
2016	2.03	94.42	62.83	237.92	3.19	1.68	1.68 [Formaldehyde]
2015	1.18	82.02	48.68	203.62	3.88	1.59	1.59 [Formaldehyde]
2014	0.3200	71.94	21.39	179.03	20.91	1.13	1.13 [Formaldehyde]
<b>Review Engineer:</b> Urva Patel  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____					<b>Comments / Recommendations:</b> Issue 10198/T06 <b>Permit Issue Date:</b> <b>Permit Expiration Date:</b>		

## 1. Purpose of Application:

Currently, INGENCO Wholesale Power, LLC - Apex holds Title V Permit No. 10198T05 with an expiration date of April 30, 2020. The TV- Renewal permit application (**Application No. 9200830.19A**) was received on August 12, 2019, which was at least nine months prior to the expiration date of the Title V permit. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

## 2. Facility Description:

The INGENCO Wholesale Power, LLC – Apex located in Apex, Wake County, North Carolina. (Standard Industrial Classification [SIC] Code 4931 – Elec & Other Services Combined) is an electrical generation facility firing landfill gas from the South Wake Landfill as fuel in the internal combustion engine/generator units. INGENCO is permitted for 36 landfill gas/diesel fuel-fired internal combustion engines with one generator for each engine. Twenty-four of these engines are currently onsite. All the diesel fuel-fired engines were previously manufactured between 1996 and 1998 and are refurbished to burn a combination of landfill gas and diesel fuel. The engine/generator units are divided into six groups with six engine/generator units in each group. Each group of six exhaust into a common exhaust manifold with one stack, for a total six stacks, once all the engines are installed. The facility consists of an operation building housing the engines, office and maintenance areas, an oil storage and unloading area, and a landfill gas transport (positive displacement blower) for moving landfill gas from the collection and control system to the INGENCO facility at the required flow rate and pressure. The engines are designed to burn all the landfill gas produced by the South Wake Landfill. However, during periods when INGENCO is not in operation, the excess gas is burned in the South Wake Landfill flare.

## 3. History / Background / Application Chronology:

### Permit History

May 20, 2015	Air Quality Permit No. 10198T02 issued with an expiration date of April 30, 2020. This 1 <sup>st</sup> time Title V (combined) issued by Booker Pullen also included a Part I significant modification for the addition of 18 additional engine/generator units with a requirement for submittal of second step processing within 12 months of startup.
November 20, 2015	Air Quality Permit No. 10198T03 issued with an expiration date of April 30, 2020. This state-only modification permit includes modification to state SB3 BACT limits.
June 5, 2018	Air Quality Permit No. 10198T04 issued with an expiration date of April 30, 2020. This permit was for Title V Ownership change.
July 11, 2018	Air Quality Permit No. 10198T05 issued with an expiration date of April 30, 2020 for Part II significant modification of the title v air permit for completion of the second step required as part of issuance of T02 as described above.

### Application Chronology

August 12, 2019	Received application for Title V - renewal permit.
August 20, 2019	Sent acknowledgement letter indicating that the application for TV - renewal permit was complete.
February 11, 2020	Facility's authorized contact was changed in the Department's database (IBEAM).

## 4. Summary of Changes to the Existing Permit (Permit No. 10198T05):

Page No.	Section	Description of Changes
Cover Letter	N/A	<ul style="list-style-type: none"><li>Update cover letter for application number, permit numbers, dates, fee class, PSD increment statement and Chief name.</li><li>Revised facility's authorized contact.</li></ul>
Permit Cover	N/A	<ul style="list-style-type: none"><li>Insert new issuance, complete application date and application number.</li></ul>

Page No.	Section	Description of Changes
Permit	Section 3	<ul style="list-style-type: none"> <li>Updated General Conditions from version 5.2 to current shell version 5.3</li> </ul>

## 5. Compliance Status:

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on October 25, 2018, Stanley Williams of the Raleigh Regional Office indicated that the facility appeared to be in compliance with all applicable requirements.

### *Five-year Compliance History:*

- The facility was inspected on October 25, 2018 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on October 31, 2017 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on November 29, 2016 and appeared to be in compliance with all applicable air quality regulations.
- A Notice of Violation was issued for documented exceedances of the permitted emission limits in effect at the time of the May 2015 emissions testing. The facility was again issued a NOV/NRE on August 13, 2015 for non-compliance with the SB3 BACT emission limits for CO and NOx based on test results from testing performed on September 9, 2014 and October 24, 2014. The NRE portion of the notification was subsequently withdrawn based on the fact that the facility addressed the emission exceedances by submitting a permit application requesting revised State BACT limits based on updated information on November 10, 2015. The facility was later inspected on November 24, 2015 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on February 28, 2014 and appeared to be in compliance with all applicable air quality regulations.

## 6. New/Modified Equipment/Changes in Emissions:

This application is submitted as a Title V - renewal. There are no changes under this permit renewal application.

## 7. Regulatory Review

The equipment is subject to the following applicable regulations. A summary of applicability is included. Applicability status does not change with respect to this renewal application. Continued compliance is expected.

### Applicable Regulatory Requirements:

- 15A NCAC 02D .0516: "Sulfur Dioxide Emissions from Combustion Sources"  
These engines are subject to 02D .0516. No monitoring, recordkeeping, or reporting (MRR) is required when firing diesel fuel or landfill gas in these engines because of the low sulfur content of the fuel. These fuels are inherently low enough in sulfur that continued compliance is expected.
- 15A NCAC 02D .0521: "Control of Visible Emissions"  
These engines are subject to 02D .0521. No MRR is required when firing landfill gas or diesel fuel in these engines, as no visible emission are expected. Continued compliance is anticipated.
- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart ZZZZ)"  
The engines are subject to "Stationary Reciprocating Internal Combustion Engines (RICE)," 40 CFR 63 Subpart ZZZZ (GACT Subpart ZZZZ or the RICE GACT as an area source for hazardous air pollutants).
- 15A NCAC 02Q .0317: "Avoidance Conditions" for 15A NCAC 02D .0530 (for NOx and CO)"  
INGENCO has accepted avoidance conditions for 15A NCAC 02D .0530, Prevention of Significant Deterioration, for emissions of CO and NOx from these engines. More discussion on PSD avoidance is provided in Section 8.

- North Carolina General Statute G.S. 62-133.8(g) (STATE-ENFORCEABLE ONLY)  
The permit currently includes the following emission limits and work practice requirements for SB3 Best Available Control Technology (BACT):
  - CO emissions shall not exceed 4.0 grams per horsepower-hour (g/hp-hr),
  - NOx emissions shall not exceed 2.0 g/hp-hr, and
  - PM10/PM2.5, SO2, VOCs, Pb, and Hg shall be controlled from each engine using good combustion practices and the burning of landfill gas in the engine.

INGENCO must conduct inspection and maintenance of these engines to ensure compliance with the SB3 BACT limits. The facility must also conduct annual testing on groups of engines to demonstrate compliance. The most recent testing that has been reviewed was conducted on November 8, 2018, and compliance was demonstrated for Group C engines as shown in the table below:

Actual Generator Power Output/ (Gas Fraction)	Pollutant	EPA Method	Test Results	Emission Limit	Standard	Compliance
@ 284.9 kW each 81.4% of Max	NO <sub>x</sub>	M7E	2.40 g/kW-hr	11.5 g/kW-hr	60 Subpart IIII	Yes
			1.79 g/HP-hr	2.00 g/HP-hr	SB3 BACT	Yes
			0.53 lb/mmBtu	N/A	PSD Reporting Emissions Factor	---
	CO	M10	3..38 g/KW-hr	14.3 g/KW-hr	60 Subpart IIII	Yes
			2.52 g/HP-hr	4.00 g/HP-hr	SB3 BACT	Yes
			0.75 lb/mmBtu	N/A	PSD Reporting Emissions Factor	---
<u>Notes:</u> <ul style="list-style-type: none"><li>• mmBtu = millions of Btu</li><li>• The results of the testing were approved by Brent Hall of the Stationary Source Compliance Branch in a memorandum dated January 30, 2019.</li></ul>						

## 8. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

### NSPS

This facility is NOT subject to 40 CFR 60 because these engines were manufactured before 2006 and are not considered to be reconstructed or modified, these engines are not subject to NSPS Subpart IIII. This permit renewal does not change this status.

### NESHAP/MACT

This facility is classified as a minor source for HAPs emissions and is therefore only subject to the National Emission Standards for Hazardous Air Pollutants, 40 CFR 63, Subpart ZZZZ for its engines. This permit renewal does not change this status. Applicability to this GACT was reviewed in the technical regulatory analysis performed for permit No. 10198T05 (See Betty Gatano's technical review dated July 11, 2018). The applicability to this Subpart has not changed as part of this TV renewal. Continued compliance is expected.

### NSR/PSD

INGENCO has accepted PSD avoidance conditions as shown in the table below for its engines. With these two avoidance conditions, the facility's potential emissions exceed the PSD major source threshold of 250 tons per year for CO and NOx, and the facility is considered a major source under PSD.

<b>Engines</b>	<b>PSD avoidance Limit</b>	<b>Date and Permit Number where PSD avoidance limit was added.</b>
ES-A1 through A6 ES-B1 through B6 ES-C1 through C6	NOx < 250 tons per consecutive 12-month period  CO < 250 tons per consecutive 12-month period	Permit No. 10198R00 issued on October 29, 2012
ES-D1 through D6 ES-E1 through E6 ES-F1 through F6	NOx < 250 tons per consecutive 12-month period  CO < 250 tons per consecutive 12-month period	Permit No. 10198R01 issued on May 12, 2015

No changes to the permit are required under this permit renewal, and continued compliance is anticipated.

### **112(r)**

This facility is NOT subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above applicability thresholds.

### **Compliance Assurance Monitoring (CAM)**

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all the following criteria:

- Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;
- Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source; and,
- Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

The facility does not employ the use of any control devices, therefore CAM is not applicable. No new control devices are being proposed in this permit renewal. Therefore, this permit renewal does not change this status.

### **9. Facility-Wide Air Toxics:**

The engines, which are subject to GACT Subpart ZZZZ, are exempt from NC air toxics under 15A NCAC 02Q .0702(a)(27). No changes are required under this permit renewal, and continued compliance is expected.

### **10. Facility Emission Review:**

There are no changes in potential emissions under this permit renewal. Actual emissions for 2014 through 2018 are reported in the header of this permit review.

### **11. Public Notice/EPA and Affected State(s) Review**

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. Virginia and Forsyth County Office of Environmental Assistance and Protection -local program are an affected state and a local program within 50 miles of the facility.

### **12. Other Regulatory Considerations:**

- The appropriate application fee was NOT required for this permit application.
- A Professional Engineers Seal was NOT required for this permit application.
- A zoning consistency determination was NOT required for this permit application.

- A 30-day public notice and 45-day EPA review is required for this permit application.

### **13. Recommendations/Conclusion:**

**TBD**